



# City of Portland

## Urban Wind Systems Addressing Regulatory Issues



Bureau of Planning and Sustainability  
Innovation. Collaboration. Practical Solutions.



# Portland Wind - Background

## Policy Support

- Mayor's initiative to support green infrastructure projects and regulations
- Merger of Planning and Sustainability Bureaus to facilitate communication.



# Portland Wind - Background

## Private Development Interest

- Role of wind in urban renewable energy generation
- Design options for new development



# Portland Wind - Background

## Public Project Interest

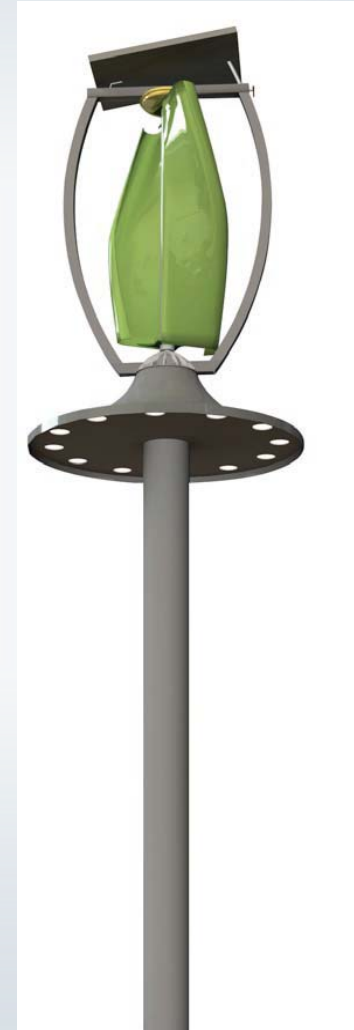
- Opportunities to foster Public Agency alternative energy investment: TriMet Light Rail South Terminus



# Portland Wind - Background

## New Industries

- Promoting innovation in growing renewable energy marketplace
- Encouragement to local start-ups.



# Regulatory Environment

## “Spotty” current regulations on green infrastructure

- Not clear how to define energy generation as accessory use
- Solar and eco-roofs addressed in some areas, not others
- Wind energy, biomass and rain cisterns not addressed in zoning code

# Regulatory Improvement Program

- Ongoing program of code improvement
- Green Package included in Regulatory Improvement Code Amendment Package 5 (RICAP 5)
- Package addressed solar installations, Wind Energy, biomass and rain cisterns
- Package also addressed these installations in special design overlay zones

# 2010 RICAP 5 Zoning Code Amendments - Green Bundle Energy-Related

- Defined small-scale energy generation from qualifying renewable resources as an accessory use.
- Clarified standards for solar panels, in base and design zones
- Created standards for solar in districts with historic resources without review.

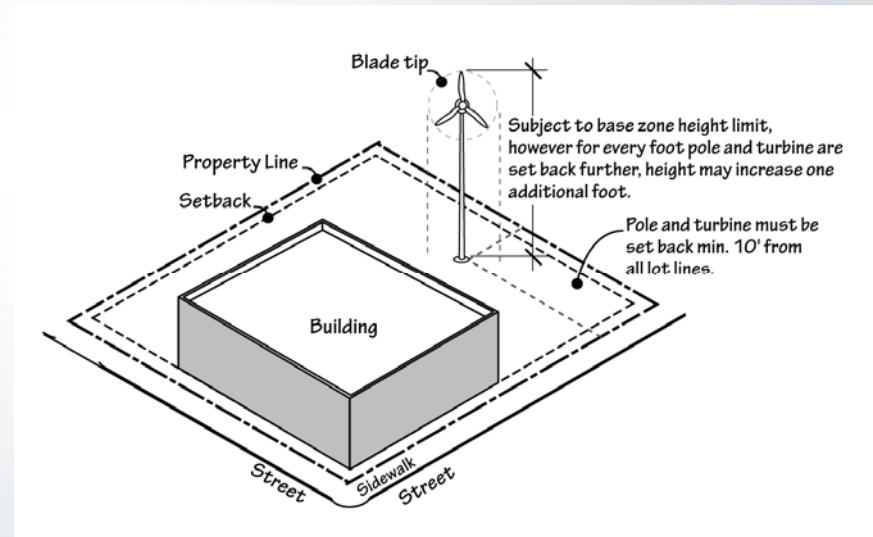




# 2010 RICAP 5 Zoning Code Amendments - Wind Specific

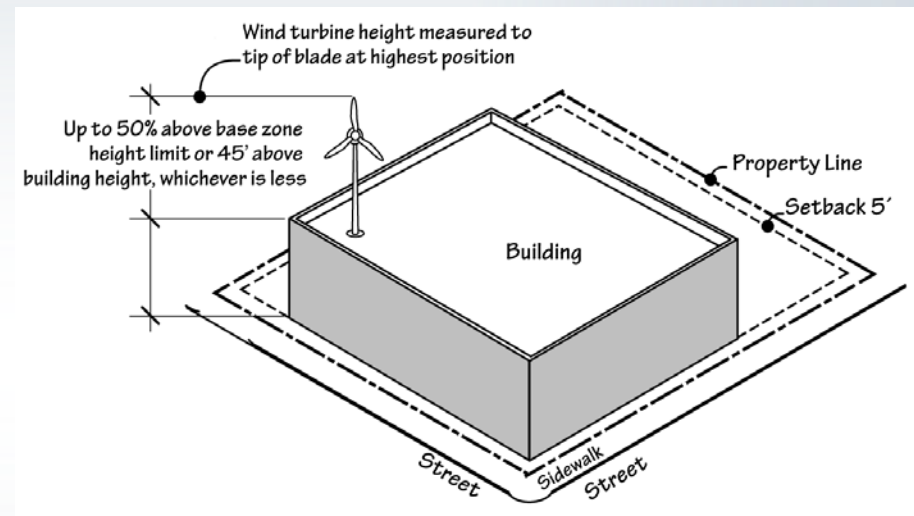
- Include wind energy in new definition for small energy production
- Create new definitions to clarify scale of wind turbines
- Create new chapter of standards for small scale wind turbines

Pole-Mounted Wind Turbine



# 2010 RICAP 5 Zoning Code Amendments - Wind Specific

- Allow turbines to exceed height of zone based on setbacks
- Maximum swept rotor areas:
  - Residential zones = 50 sq ft
  - Commercial zones = 150 sq ft
- Create noise output restrictions



Roof-Mounted Wind Turbine

# RICAP 5 Regulations in Practice

- Code effective April, 2010
- Recession a factor
- Local startups have not begun production
- Solar incentives encourage more activity in that realm



# RICAP 5 Regulations in Practice

- Overall few examples under the new regulations
- Few opportunities to monitor results



# Facility Performance Factors

## City-Owned Sunderland Yard 10kW Bergey turbine on 100 ft.lattice tower.

- 2005 pilot project
- First turbine to be installed in Portland
- 5,600 kWh total energy production is less than anticipated



# Thank You

Bureau of Planning & Sustainability Website

<http://www.portlandonline.com/bps>

- Location for Regulatory Improvement Project
- Information on other planning & sustainability projects